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ABSTRACT OF THE DISCLOSURE

A common narrow-band speech signal is expanded into a wide-band speech signal. The expanded signal gives the impression of a wide-band speech signal regardless of what type of vocoder is used in a receiver. The robust techniques suggested herein are based on speech acoustics and fundamentals of human hearing. That is the techniques extend the harmonic structure of the speech signal during voiced speech segments and introduce a linearly estimated amount of speech energy in the wide frequency-band. During unvoiced speech segments, a fricated noise may be introduced in the upper frequency-band.